

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
25 March 2004 (25.03.2004)

PCT

(10) International Publication Number  
WO 2004/023906 A3

(51) International Patent Classification<sup>7</sup>: B32B 5/18, 5/24

(84) Designated States (*regional*): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

(21) International Application Number:

PCT/US2003/028203

(22) International Filing Date:

9 September 2003 (09.09.2003)

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

(25) Filing Language:

English

Published:

— with international search report

(26) Publication Language:

English

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(30) Priority Data:

60/410,455 12 September 2002 (12.09.2002) US

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(88) Date of publication of the international search report:

10 June 2004

(81) Designated States (*national*): AT, AU, CA, CH, CN, CZ, DE, DK, ES, FI, GB, HR, JP, KR, NO, NZ, PL, PT, RU, SE, US, ZA.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



WO 2004/023906 A3

(54) Title: NON-WOVEN PROTECTIVE GARMENTS WITH THERMO-REGULATING PROPERTIES

(57) Abstract: Non-woven protective garments consisting of multi-layer composite barrier fabrics where at least one of the layers is made of an elastomeric material comprising finely divided phase change materials such as crystalline alkyl hydrocarbons or salt hydrates facilitate thermo-regulation due to latent heat absorption and latent heat release in the phase transition range of the phase change material, which improves the thermal performance and enhances the comfort of non-woven protective garments significantly.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/28203

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B32B 5/18, 5/24  
US CL : 442/327,370,374,394

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 442/327,370,374,394

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| Y          | US 6,095,720 A (STARK) 01 August 2000 (01.08.2000), see entire document.           | 1-21                  |

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

|   |  |   |
|---|--|---|
| <p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> |  | <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p> |
|---|--|---|

Date of the actual completion of the international search

19 March 2004 (19.03.2004)

Date of mailing of the international search report

20 APR 2004

Name and mailing address of the ISA/US

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# INTERNATIONAL SEARCH REPORT

PCT/US03/2820

## Continuation of B. FIELDS SEARCHED Item 3:

WEST

search terms: nonwoven, phase change, reversible thermal, rubber, film, sheet